Steve Maykut / Air + Haz

News Release

Rhode Island Department of Environmental Management

Office of Information & Education

#1

Release: Information:

Thomas Getz 277-27 ,
Stephen Morin 277-2771

IMMEDIATE

Wednesday, October 29, 1986

DEM PRESENTS RESULTS OF SOIL TESTING AROUND CIBA-GEIGY TO LEGISLATIVE COMMISSION OVERSEEING DISMANTLING OF PLANT

Officials from the RI Department of Environmental Management tonight presented members of the legislative commission and Cranston's city task force who are overseeing the dismantling of the Ciba-Geigy Company with results of the soil testing done in the vicinity of the plant.

In general, results showed low concentrations of some of the compounds which were tested for, but none of the levels found in these soil samples appears to constitute a public health threat.

DEM was requested to sample the area of Ciba-Geigy at the time of its hearing for a hazardous waste permit in February, and was assisted in selecting sampling sites by the president of the local neighborhood association. The six test sites included three at homes near Geigy and downwind of the plant; two further downwind; and one south of the plant in Warwick. A seventh test site in Roger Williams Park was selected as background.

The test results did not show conclusive patterns, and in many cases showed unexpected or inconclusive results. Since many of the substances found are generally present in urban soil, additional sampling needs to be done. The additional sampling in the neighborhood as well as control testing of urban soils elsewhere will be done before any final decisions can be made or conclusions drawn. Three other urban residential locations not in the vicinity of Geigy will be sampled to gain

(more)

a better understanding of background urban contamination.

The only conclusion that can be drawn from the samples analyzed is that the presence of VOCs (volatile organic compounds) and tinuvins may have been caused by Geigy, but test results did not always show highest levels near the plant. Levels of VOC and tinuvin 327 and 328 were found at the two sites furthest from the plant - including the control site - leading to the possibility that the substances are found in widespread areas. The second highest levels of tinuvin were found at the site closest to the plant. Tinuvins, benzotriazole derivatives, are among the compounds known to be used or manufactured at Geigy.

The lab also reported the presence of polycyclic aromatic hydrocarbons (PAH) which often are found in soils, particularly in urban areas. They are produced by sources of combustion, including boilers, automobiles, and wood stoves, and also are formed during the degradation of organic matter in soil. The highest levels occured at the three sites furthest from the plant, but are not substantially different from those normally observed in urban areas and are considerably lower than the PAH levels in road dust.

The new round of samples should be collected within the next week and analyses done within six weeks. In conjunction with analysis of those samples, DEM and the Health Department will further examine whether there is any potential health threat from any of the substances found and whether any remedial action is necessary.

###

RESULTS OF SOIL SAMPLING IN CRANSTON AND WARWICK

FOUND:	RANGE:	BACKGROUND SITE:
Metal (ppm)		
zinc	19.9 to 105.2 all sites	65.5
VOCs (ppm)		
Chloroform	0.5 to 40 all sites	6
Dichloromethane	1 to 70 all sites	10
Toluene	0.6 to 2 4 sites	0.9
xylene	0.9 to 3 3 sites	2
OTHER VOCs AT ONLY SITE CLOSEST TO PLANT		
bromodichloromethane	1	
1,1,1 - trichloroethane	0.8	
carbon tetrachloride	0.5	
1,2 - dichloroethene	0.8	
benzene	0.7	
ethylbenzene	0.5	
OTHERS (ppb)		
biphenyl	34 to 950 3 sites	0
tinuvin 327	2100 to 11,000 2 sites	110
tinuvin 328	110 to 1500 3 sites	36

PAHs were generally found.

NOT DETECTED AT CONCENTRATIONS ABOVE THE MINIMUM DETECTION LIMIT:

VOCs
- dibromochloromethane
- bromoform
- trichloroethylene
- 1,1,2 - trichloroethane
- tetrachloroethylene
- 1,1,2,2 - tetrachloroethane
- 1,1 - dichloroethene
- 1,1 - dichloroethane
- 1,2 - dichloropropane
- 1,3 - dichloropropene (cis & trans)
- chlorobenzene
- 2 - chloroethylvinylether

OTHERS
- [illegible]

CIBA-GEIGY

News Release

Contact: Charles T. Keene (914) 478-3131

October 29, 1986

FOR IMMEDIATE RELEASE

CIBA-GEIGY REVIEWS SOIL TEST RESULTS

CIBA-GEIGY Corporation today said it was pleased with the results of soil testing performed last summer by the Rhode Island Department of Health laboratories at the request of the state's Department of Environmental Management.

The state's analysis of soil from six neighborhood locations near CIBA-GEIGY's Cranston Plant did not detect most of the substances which were tested for in the soil samples.

The analyses showed traces of certain materials commonly found in soil samples and showed inconsistent data on two substances, Tinuvins 327 and 328, which were made at the plant. Tinuvins are used in plastics to prevent brittleness and discolorization due to sunlight.

"We have reviewed the test results, and have no reason to believe that there is any risk to public health in the neighborhood," said Charles T. Keene, company spokesman. "We support the Rhode Island DEM in its soil testing efforts and will continue to work with the agency in resolving any outstanding issues."

-30-

10-30-86

RHODE ISLAND

Toxic chemicals found in yards near Ciba-Geigy

None poses risk to health, says DEM; more tests slated

By PETER LORD
Journal-Bulletin Staff Writer

PROVIDENCE — A survey of yards around the Ciba-Geigy Co. chemical plant in Cranston and Warwick has uncovered a confusing "but not alarming" array of toxic and, in some cases, cancer-causing chemicals.

In no case were the chemicals found at high levels and none appears to pose a risk to residents' health, according to the Department of Environmental Management.

But DEM officials said some were at high-enough levels to warrant spending thousands of dollars on another round of tests near Ciba-Geigy and elsewhere in Rhode Island.

"The results do not show a major crisis," said Deputy DEM Director James Fester. "But we do have some cause for concern."

"On the basis of seven samples, all we really have is cause for more investigation," said DEM Director Robert L. Bendick Jr. "Pinning this on somebody is jumping to conclusions."

Residents eager for results

But Bendick's aides said some of the chemicals quite likely came from Ciba-Geigy. Others are probably common to any urban area.

The DEM promised to survey the neighborhood surrounding Ciba-Geigy last winter during a hearing related to the company's plans to close the controversial plant.

Residents said that before the company leaves, they wanted to know if it had contaminated their properties.

In recent weeks, commissions appointed by the General Assembly and Cranston Mayor Michael A. Traficante to oversee the plant dismantling have been clamoring for the results.

On Monday, Bendick showed the results to the leaders of the groups, and they hurriedly called a meeting last night at the State House for a

were taken from six locations near the plant and one in Roger Williams Park as a control. The DEM looked for 46 chemicals known to be used or emitted by Ciba-Geigy.

There were a variety of reactions.

This "has thrown a little fright into me tonight," said David Dallas, a Warwick Councilman.

Dominic Tutela, an engineering consultant for Cranston, said the Traficante administration would push for much more testing. "I really feel there is strong evidence here linking these chemicals and Ciba-Geigy."

Company says it's pleased

Two representatives of Ciba-Geigy sat quietly throughout the presentation. Afterward, they issued a press release saying the company was "pleased with the results," because they "did not detect most of the substances which were tested for."

"The analysis showed traces of certain materials commonly found in soil samples, and showed inconsistent data on two substance, Tinuvins 327 and 328, which were made at the plant."

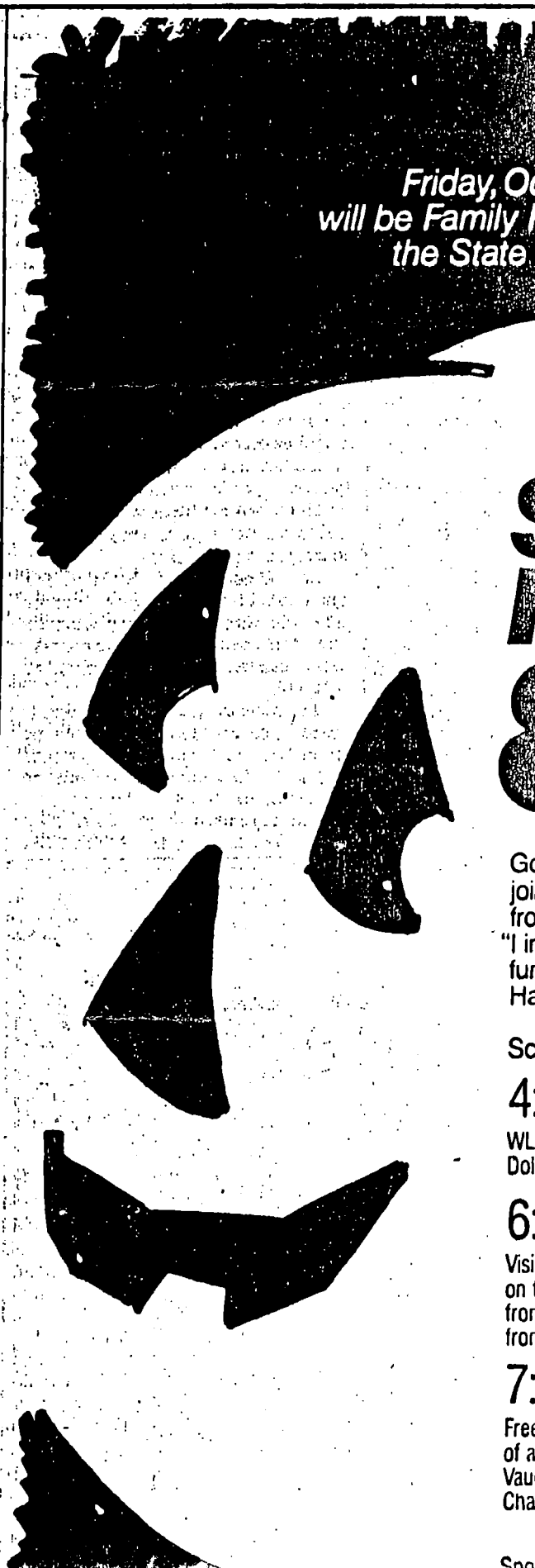
The Tinuvins, used in plastics, were found at levels of 2,100 parts per billion at one site near the plant. But at another site, several blocks farther away, it was as high as 11,000 parts per billion.

State toxicologist Barbara Morin said that in one test, dogs were fed Tinuvins at levels 200 times higher than that found in the Cranston soil for 14 weeks and suffered no ill effects.

"I'm not saying there isn't a possibility of a long-term effect," she said. "What we see here is not good, but it's not cause for panic."

Morin said that in determining whether the chemicals would harm residents' health, she considered that they could be inhaled, ingested from children's dirty hands or absorbed through the skin. She said she didn't consider the effects of people growing vegetables in the soil and eating them.

Bendick invited advice from the



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

INTER-OFFICE MEMO

TO: Robert L. Bendick
Director
DEPT: Environmental Management

DATE: 24 October 1986

FROM: Thomas D. Getz, Chief TDG
Air & Hazardous Materials
DEPT: Environmental Management

SUBJECT: Soil Sampling at Ciba-Geigy

This will bring you up to date on the subject sampling. We were requested to sample in the area of Ciba-Geigy at the time of their hearing for a hazardous waste permit in February 1986. We agreed to do the sampling to examine whether contamination from Geigy was present off the site.

We sought assistance for selecting the sampling sites from Marion McGrath, President of the Elmwood Neighborhood Association. Mrs. McGrath accompanied our samplers to point out the sites. Unknown to the samplers, our agreement was not to sample in the flood plain of the Pawtuxet River so as to make interpretation of the results easier. However, two samples were taken in the flood plain. For that reason and because the samples were stored in the lab for too long a period, those samples were not analyzed. A second set of samples was taken on 23 July using Mrs. McGrath's suggestions but not taken from the flood plain.

Attached are the results of the sampling. Samples 4, 5 and 6 were taken at homes near Geigy and downwind of the prevailing wind. Samples 2 and 3 were taken farther downwind. Sample 1 was taken at a home south of the plant in Warwick. Sample 7 was taken as a background in Roger Williams Park. Analyses of the samples were done by the Department of Health at a cost of $2,235 per sample. The money was taken from the Hazardous Waste Bond Fund.

In general, the results showed low concentrations of many of the compounds which were analyzed. Below I will explain our analysis of the results.

No conclusions can be drawn from the zinc results. Samples farthest from the site showed the highest results. Other soil samples from where we have taken have had results at the levels of these samples.

The most VOC's and the highest levels were found at Site 6, the closest downwind site to Geigy. Chloroform and methylene chloride were found at most of the sites and in the highest levels of any of the VOC's. We have no record of chloroform use at Geigy; however, this compound may have been formed at an old water treatment plant at the plant. We also have no record of methylene chloride use at Geigy. Both these compounds are often found in soil samples.

The lab reported results of polycyclic aromatic hydrocarbons (PAH). We did not request them to analyze for these compounds; however, their presence was indicated in the analyses and therefore were reported. Literature concerning the presence of these compounds in the environment indicates that they are often found in soils, especially in urban areas. They are produced by sources of combustion including boilers, automobiles and wood stoves and are also formed during the degradation of organic

matter in soil. We have no explanation why Samples 2, 3 and 4 have the highest levels. The largest sources of combustion in the area are Geigy and the Atlantic Tubing Complex, just to the west of Geigy, so we would expect Samples 4, 5 and 6 to have the highest levels. A sample of soil from a rural residential area in North Kingstown was run by the Lab to test their procedures. This sample showed little PAH present. This may be because of the rural origin of the sample.

We also requested the Lab to analyze for other compounds which we know were used or manufactured at Geigy. The most important of these are the two tinuvins. Tinuvins are used as antioxidants in the manufacture of plastics. They have been found by others in bay sediments. Again, we would expect that the highest levels of contamination would be at Sites 4, 5 and 6. Site 6 had the second highest tinuvin levels but Site 2, the farthest downwind, had the highest levels. Our analysis here is also complicated by tinuvin levels at Site 7, which is considered the background.

The only conclusion with respect to the presence of the compounds analyzed we can draw is that the presence of VOC and tinuvins may have been caused by Geigy. This conclusion cannot be more definite because the results did not always show the highest levels near Geigy (Samples 4, 5 and 6), and lower or not detected levels farther away or in the background (Samples 2, 3 and 7). Also, because levels of VOC and tinuvins were found in Samples 2 and 7, we must consider the possibility that these substances are ubiquitous.

The potential health effects associated with the substances detected in the soil samples were evaluated. Inhalation of dust, ingestion of soil, and absorption through the skin were considered as possible routes of exposure. The uptake of contaminants by garden vegetables was not considered at this time, due to inadequate information. Potential groundwater contamination from soil leachate was also not evaluated, since area residences are serviced by public water supplies.

It was determined that the concentrations of volatile organic compounds found in the soil samples do not present a significant health risk. Only chloroform and dichloromethane levels come close to acceptable limits. It should be noted that both of these substances are considered suspect human carcinogens.

The PAH levels found in Samples 2, 3 and 4 appear elevated but are not substantially different from those normally observed in urban areas and are considerably lower than PAH levels in road dust. Since some of the PAH's, notably benzo-a-pyrene, are potent animal carcinogens, it is preferable to have PAH levels in soil and air as low as possible. However, this problem is considered a widespread urban problem, rather than a specific neighborhood problem.

It has been determined that the 950 ppb biphenyl level found at Site 4 does not present a significant health risk. This substance is used as a fungicide and a heat transfer agent.

The concentrations of tinuvin 327 and 328, two benzotriazole derivatives the highest levels of which were found at Site 2, likewise do not present a significant health problem. It should be noted, however, that some benzotriozoles have been shown to be mutagenic in certain bacterial species, a property which sometimes correlates with carcinogenesis. Further research on the carcinogenic potential of these substances is necessary before any conclusions in this area can be drawn.

In summary, none of the substances found in these soil samples constitute an immediate public health threat in the concentrations determined. Since chloroform, dichloromethane and certain of the PAH's are suspect human carcinogens, it is advisable to avoid extensive contact with these substances. However, we believe concentrations in these soil samples are within a normal range for urban soil. Uptake of these substances by garden plants will be considered as more information becomes available.

Before any final decisions are made as to what major steps should be taken next, I feel it is necessary to get some further confirmation of these results. On Monday, 27 October, we will be collecting additional samples. We will be re-sampling at Site 2 to confirm or deny its high tinuvin levels. We will also be sampling at three other urban residential locations, not in the vicinity of Geigy, to try to understand how widespread any VOC, PAH and tinuvin contamination is.

When the results of the sampling are returned, we should be able to refine our conclusion on whether Geigy is the source of the contamination found. We must then decide if any further study of the level and area of contamination and any potential health effects is warranted.

tg
Enclosures

sampl-cg/tg2